-86°C Ultra Low Temperature Freezers



MDF-U5386SC
MDF-U7386SC
MDF-793C
MDF-593C

ULTRA LOW TEMPERATURE FREEZERS

The Ideal – 86°C Freezing Environment in Capacities from 17 cu.ft. to 24 cu.ft.

Ideally suited for ultra storage laboratories, for long-term preservation and storage of blood, specimens and components, and in testing of various types. Ranging in size from economical chest freezer to large capacity upright configuration, one of these models is sure to be suitable for your needs. Whatever your preservations needs are, SANYO provides the right equipment to meet your exact needs. SANYO preservation systems employ advanced technology to insure a high precision temperature environment.

innovation
performance
reliability
support

preservation

innovation
performance
reliability
support

p r e s e r v a t i o n

-86°C PRODUCT FAMILY

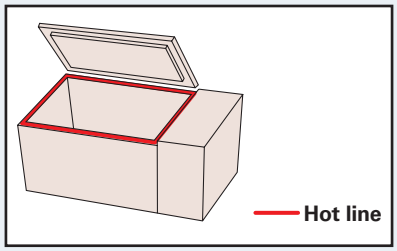
A wide range of Ultra-low temperature freezers.
This product family offers different types and models of ultra-low freezer which can achieve and maintain temperatures down to -86ºC (-123ºF) at ambient temperature of 30ºC (85ºF). It is a wide selection, offering a variety of sizes and types suitable for uses such as long term preservation, testing, frozen storage etc.

Specially Designed Compressor for Ultra-Low Temperature.
The refrigeration system is at the heart of producing ultra-low temperature freezing. In the process of developing various technical solutions in order to achieve and maintain ultra-low temperatures, Sanyo designed a compressor especially for ultra low-temperature use. Sanyo is a leading manufacturer of ultra-low temperature freezers that develops and produces all its own components, from the refrigeration units to the microprocessors.

An Ideal Freezing Environment By Means of A Double-Insulation Wall and the "Hot Line".
In Ultra-Low temperature freezers, effective insulation is extremely critical since the temperature difference between the outside and the inner compartment

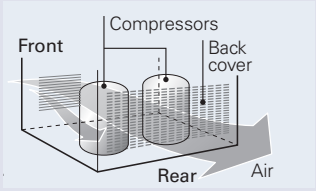
DESIGN

can be as high as 115ºC. The insulation used in Sanyo's ultra-low temperature freezers is two layers of rigid, foamed in place polyurethane. This design prevents the insulation layers from distortion and cracking that might occur due to temperature differences inside and out, and creates the most efficient insulation material available today. Moisture condensation at the top edges of the cabinet due to differences in temperature inside and out causes frost and icing problems, which may reduce heat insulation efficiency and obstruct door movements. They are prevented by the "hot line" by means of which hot gas from the higher temperature circuit is circulated through the problem areas.



UPRIGHT -86ºC ACCESSIBILITY

Evolutionary Design
- The newly developed refrigeration system and freezer structure minimizes intrusive operating noise.
- The newly developed back cover combined with new aerodynamically designed and placed components in the refrigeration compartment provide superior air flow, making it possible to drastically reduce the stress to the freezer and contributing to excellent durability.
- Two independent and insulated inner doors ensure maximum interior chamber uniformity.



Safety
- High and low temperature warning provides an audible and visual alarm when the temperature deviates more than ±5°C to ±20°C (adjustable) from the set point.
- Alarm ring back function ensures that buzzer will resume operation, should alarm conditions continue after it is silenced.
- Microprocessor-controlled filter-clog check function
protects the refrigeration circuit.
- Control panel with digital display for easy operation.

MDF-U7386SC

-86°C
23.5 cu.ft.

MDF-U5386SC

-86°C
17.1 cu.ft.



p r e s e r v a t i o n

Accessibility

- A new rugged inner door latch tightly closes the inner door and makes accessing chamber contents easier.
- The condenser filter is located at the bottom right side of the front panel to make filter removal and cleaning easier.
- Alarm lamp and buzzer offer secure warning of power failure or abnormal temperature increase.
- New rugged, one-handed outer door latch has a hasp to allow a padlock for additional security

SAFETY & ALARM

Built-In Temperature & Power Failure Alarms(Lamp/Buzzer).
In case of power failure or an irregular rise in temperature, a rechargeable, Cadnica battery-operated indicator lamp and alarm will be activated. Optional CO_2 and LN_2 back-up systems are available and are self-activated when a power outage occurs. This equipment helps ensure that the contents will be protected in the event of any power failure or mechanical trouble.

Easy to Operate.
Overall operability and dependability are greatly enhanced by improved design details. Highly durable hinges are used to support the large door so both opening and closing are facilitated. Door handles are equipped with a latch-locking system.

A Wide Range to Choose From Large, Small, Chest and Upright- A freezer to suit your needs.
Chest type freezers low profile design makes the placement and removal of contents very convenient. The upright type is designed to accommodate a large capacity in a limited space. Even very narrow spaces can be readily utilized.

RELIABILITY & CONTROL

A Special Refrigerant and Oil to Maintain Stability and Reliability.
In order to expand refrigeration capacity, a special compound refrigerant has been used. This refrigerant relieves the refrigeration system of much of its load by evaporating at a lower temperature level within the circuit. Also, a special grade of refrigeration machine oil is used that offer superior properties of high rate of recovery and outstanding resistance to heat and wear. This contributes to the long life and dependability of the freezer unit as a whole.

Microprocessor Temperature Control With Digital Design.
The temperature inside the freezer can be set and monitored easily by means of precise microprocessor temperature control with digital display. The thermostat utilizes a platinum resistor (Pt 100) sensor which is precise and extremely durable.

MDF-593C

-86°C
17.1 cu.ft.

MDF-793C

-86°C
24.7 cu.ft.

Specifications

Model		MDF-593C	MDF-793C
Temperature range		-20°C to -86°C	-20°C to -86°C
Exterior dimensions (W x D x H)		2,010 x 770 x 1,070 (79.1 x 30.3 x 42.1)	2,570 x 770 x 1,070 (101.2 x 30.3 x 42.1)
Interior dimensions (W x D x H)		1,280 x 500 x 762 (50.3 x 19.7 x 30)	1,840 x 500 x 762 (72.4 x 19.7 x 30)
Effective capacity		487 liters (17.1 cu.ft.)	701 liters (24.7 cu.ft.)
Exterior Cabinet		Painted Steel	
Interior Cabinet		Stainless Steel	
Inner Lid		3	4
Insulation		Rigid polyurethane foamed-in place	
Compressor	High stage side	Hermetic type 750W	Hermetic type 1,100W
	Low stage side	Hermetic type 750W	Hermetic type 1,100W
Evaporator	High stage side	Cascade condenser	
	Low stage side	Tube on sheet (shared with interior)	
Condenser	High stage side	Fine and tube type	
	Low stage side	Shell and tube type	
Temperature Control		Microprocessor: Keypad input Temp. input range: -20°C to -95°C (1C increment) Set value memory: non-volatile memory	
Temperature Display		Digital Display	
Sensor		Platinum resistance (Pt. 100)	
Alarm System		Selectable high temp. alarm (+10°C & +15°C from set point), Power Failure alarm, Filter check lamp, Remote alarm contact	
Net Weight (Approx.)		305kg (672 lbs)	375kg (827 lbs)
Power Requirement		220V / 60hz Built-in voltage booster	

*Appearance and specifications are subject to change without notice.

Model	MDF-U7386SC	MDF-U5386SC
Temperature range	–50°C to –86°C (1°C increment)	–50°C to –86°C (1°C increment)
Maximum cooling performance	–86°C (Ambient temp. 30°C)	–86°C (Ambient temp. 30°C)
Exterior dimensions (W x D x H)	44.5" x 34.4" x 78.3" (1130 x 875 x 1990mm)	35.0" x 34.4" x 78.3" (890 x 875 x 1990mm)
Interior dimensions (W x D x H)	34.2" x 23.6" x 50.4" (870 x 600 x 1280mm)	24.8" x 23.6" x 50.4" (630 x 600 x 1280mm)
Net weight	783 lbs. (Approx. 355kg)	672 lbs. (Approx. 305kg)
Effective capacity	23.5 cu.ft. (668 L)	17.1 cu.ft. (483 L)
Shelf	Stainless steel, Adjustable, 3 shelves, W848 x D533mm, Max. load: 50kg (110 lbs.)/shelf	Stainless steel, Adjustable, 3 shelves, W608 x D533", Max. load: 50kg (110 lbs.)/shelf
Access port	17mm diameter, 3 locations (back, bottom left/right corner)	.07"(17mm) diameter, 3 locations (back, bottom left/right corner)
Compressor	Hermetic type, Output: 1100 W (high stage), 1100 W (low stage)	Hermetic type, Output: 1100 W (high stage side), 1100 W (low stage side)
Refrigerant	HFC refrigerants	HFC refrigerants
Alarm	High/low temperature, Power failure, Filter check, Battery check	High/low temperature, Power failure, Filter check, Battery check
Remote alarm contact	Allowable contact capacity: DC 30V, 2A	Allowable contact capacity: DC 30V, 2A
Accessories	1 set of keys, 1 scraper	1 set of keys, 1 scraper
Power Requirement	220V / 60 Hz Built-in voltage booster	220V / 60 Hz/ 1 phase Built-in voltage booster Nema 6-15 Recepticle

Inventory rack
SUR-524-I
Rack Capacity: 24

Circular recorder
MTR-C954

Strip Chart Recorder
MTR-85H

Recorder mounting bracket
MDF-S3085
(for MTR-85H)

LCO_2 backup system
CVK-UB2 (I)
LN_2 backup system
CVK-UBN2

ISO 9001 & 14001 certified

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